WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2005WI90B

Title: Foundry Slag for Treating Arsenic in Ground Water and Drinking Water

Project Type: Research

Focus Categories: Groundwater, Treatment, Water Quality

Keywords: arsenic, drinking water, treatment

Start Date: 03/01/2005

End Date: 02/28/2006

Federal Funds: $38,823

Non-Federal Matching Funds: $37,603

Congressional District: 2

Principal Investigator:
Craig H. Benson

Abstract

Recent studies have shown that slags from steel production can be very effective in removing As from ground water. This proposal focuses on evaluating a similar material that is readily available in Wisconsin, i.e., slag from gray-iron foundries. Gray-iron slag is a granular byproduct of iron casting operations that is discarded in landfills or reused as granular fill in civil engineering construction. Most gray-iron slags can be obtained for little or no cost from foundries, and in some cases foundries are willing to truck slag to a job site. The objective of this study is to determine whether slags from Wisconsin gray-iron foundries have the same reactive nature as steel slags. Both contain an appreciable quantity of iron, which is the key constituent in slags responsible for the redox reactions that remove As. A successful outcome of this study would be a low-cost reactive medium readily available to Wisconsin communities for As treatment. Moreover, use of foundry slag in this manner will foster sustainable development through beneficial reuse of a byproduct often discarded in landfills as a waste.